

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ABSTRACT

A shot pellet that, has an inner core of a material such tungsten carbide, that is coated with a layer of bismuth. This coating is molecularly bonded to the tungsten carbide and is not an alloy. The unique properties of the shot pellet allow its density to be tailored. Under this process, the effective density of the pellet can be made to be identical to lead for direct replacement in current lead loading formulations. Additionally, the density can be made to be lower than lead for shotguns requiring low barrel pressures, or higher than lead for enhanced energy transfer while maintaining the other advantages of the instant invention.